CRITICAL FIRE WEATHER EVENTS

"Critical Fire Weather" conditions are those that ***could*** result in extreme fire behavior, or, in the case of problem or "dry" lightning, an abnormally high number of ignitions. One must be careful when assessing problematic or dry lightning. There are times when lightning activity does not meet Red Flag criteria (at least LAL 3 coverage), but does result in a high incidence of project fires.

The overall severity of any fire season is highly correlated with the extent and frequency of critical fire weather patterns during the season. It is not unusual to have an extended dry period during any given fire season. This in itself could result in an elevated degree of fire activity, provided the fuel conditions are right. However, to elevate a high fire danger situation to a critical or extreme level normally requires an additional weather element, or trigger event to be superimposed on the dryness. This additional trigger could be problematic or dry lightning, an extremely unstable air mass, or a combination of strong wind and low humidity. Red Flag Warnings are issued when a combination of critical weather exists ***with*** sufficiently dry fuels and severe burning conditions. The Red Flag criteria for the Portland Fire Weather district are listed below:

CRITERIA FOR STRONG WIND AND LOW HUMIDITY (NIGHT)

ZONES 601 AND 602: Two stations must report 35% humidity or less **AND** 10-minute wind speed of 10 mph or more for 3 hours in an 8-hour block.

ZONES 603 AND 612: Rockhouse1 RAWS must report 35% humidity or less **AND** 10-minute wind speed of 15 mph or more for 4 hours in an 8-hour block **AND** one other RAWS must report 35% or less humidity **AND** 10-minute wind speed of 10 mph or more for 2 hours.

ZONE 604: Two stations (airports) must report 30% humidity or less **AND** 2-minute wind speed of 15 mph or more for at least 4 hours in an 8-hour block.

ZONES 605, 607, AND 660: One station must report 35% humidity or less **AND** 10-minute wind speed of 10 mph or more for 4 hours in an 8-hour block **AND** at least **TWO** other stations must report 35% or less humidity **AND** 10-minute wind speed of 10 mph or more for at least 2 hours.

ZONES 606 AND 608: One station must report 30% humidity or less **AND** 10-minute wind speed of 10 mph or more for at least 4 hours in an 8-hour block **AND** one other station must report the same for at least 1 hour.

CRITERIA FOR STRONG WIND AND LOW HUMIDITY (DAY)

At least 2 stations within a zone must report 25% humidity or less **AND** wind speed of 10 mph or more (except 15 mph in zone 604) for at least 4 hours in an 8-hour block.

CRITERIA FOR DRY AND UNSTABLE AIR MASS (HAINES 6)

At least **ONE** station within a zone must report 25% humidity or less **AND** show a high-level Haines value of 6 **AND** fuel conditions (Dryness Levels) are in the "RED". At forecaster discretion, can also be issued when Dryness Levels are "YELLOW".

PROBLEM LIGHTNING

Dryness Levels MUST be in the "RED" and expected lightning frequency is such that multiple starts (about 5-7) are expected. Typically scattered or LAL 3 coverage. At forecaster discretion, can also be issued when Dryness Levels are "YELLOW".

There were three critical fire weather events during the 2005 fire season, one of which was missed. All events resulted in Red Flag Warnings. One event was for low humidity and east wind. The missed event was also for low humidity and east wind. The other event was an unstable air mass (also referred to as a Haines 6 pattern) with low humidity. Surprisingly, there were no problematic lightning events, although lightning did occur during the peak part of the season. Also, there were no east wind events during the latter portion of the season.

JULY 27, 2005

This was a case of a dry and unstable air mass for the Cascades. The 12 UTC Salem sounding showed a high-level Haines index of 5, and a mid-level Haines of 6. Figure 6 is a modeled sounding for Portland, OR valid 12 UTC July 27th. Notice the low-level inversion, and extremely dry air between 800 mb and 700 mb. The upper air pattern (see Figure 7) shows a strong ridge over the Pacific Northwest, with a weak upper low well off the South Oregon coast. The surface thermal trough extended from Southwest Oregon through the Columbia Gorge and Columbia Basin to the Okanogan valley of North-Central Washington. Morning humidity recovery in the Cascades was poor. Most areas observed humidity recovery of 30 to 45 percent. Emigrant RAWS, in the south part of zone 608, had a recovery of just 20 percent. Wanderer's Peak, in zone 607, had a recovery of 30 percent. The well-sheltered elevated valleys experienced worse-than-normal recovery. Boulder Creek RAWS, in the north part of zone 608, typically experiences excellent recovery. However, on this morning, the humidity recovery was just 71 percent.

Figure 8 shows the near-surface temperature (solid color image) at 00 UTC on July 28th, and mean surface pressure. By this time a piece of the surface thermal trough remained in the Willamette Valley, but another portion was in the Columbia Basin and along the east slopes of the North Oregon Cascades. A more detailed surface analysis (not shown) at 1900 UTC depicted the thermal trough from Medford, across the Cascades to Arlington. It seems the surface thermal trough shifted across the Cascades during the afternoon. A Red Flag warning was issued at 1808 UTC for zones 607 and 608. Based on surface analyses alone, the thermal trough shift validated the warning. Past studies have shown that a thermal trough passage over an existing fire has resulted in extreme fire behavior. The HeHe Butte wildfire in 1999, and Davis Fire of 2003 are prime examples. The HeHe Butte fire started as a prescribed burn, but a thermal trough passage late in the afternoon caused it to escape and turn into a wildfire. A sudden wind increase and extremely low humidity (10 percent or less) on the Davis Fire resulted in extreme fire behavior. The fire grew from a few hundred acres to nearly ten thousand acres in a few hours.

High temperatures in the Cascades on July 27th were in the 90s. Pebble RAWS recorded 97 degrees, Emigrant and Boulder RAWS had highs of 96 degrees, and Red Box Bench RAWS registered 95. Minimum humidity values ranged from 9 percent at Boulder Creek RAWS to 19 percent at Fields RAWS. Critical daytime humidity is defined as 25 percent or less.

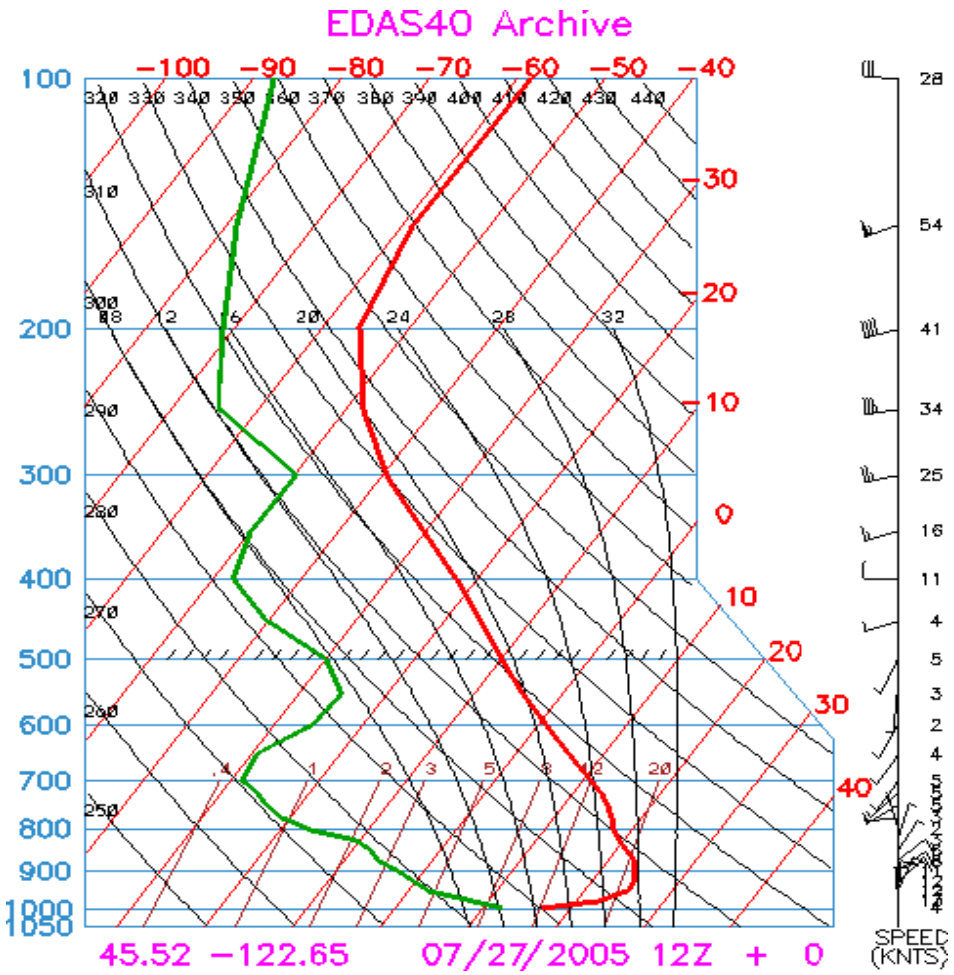
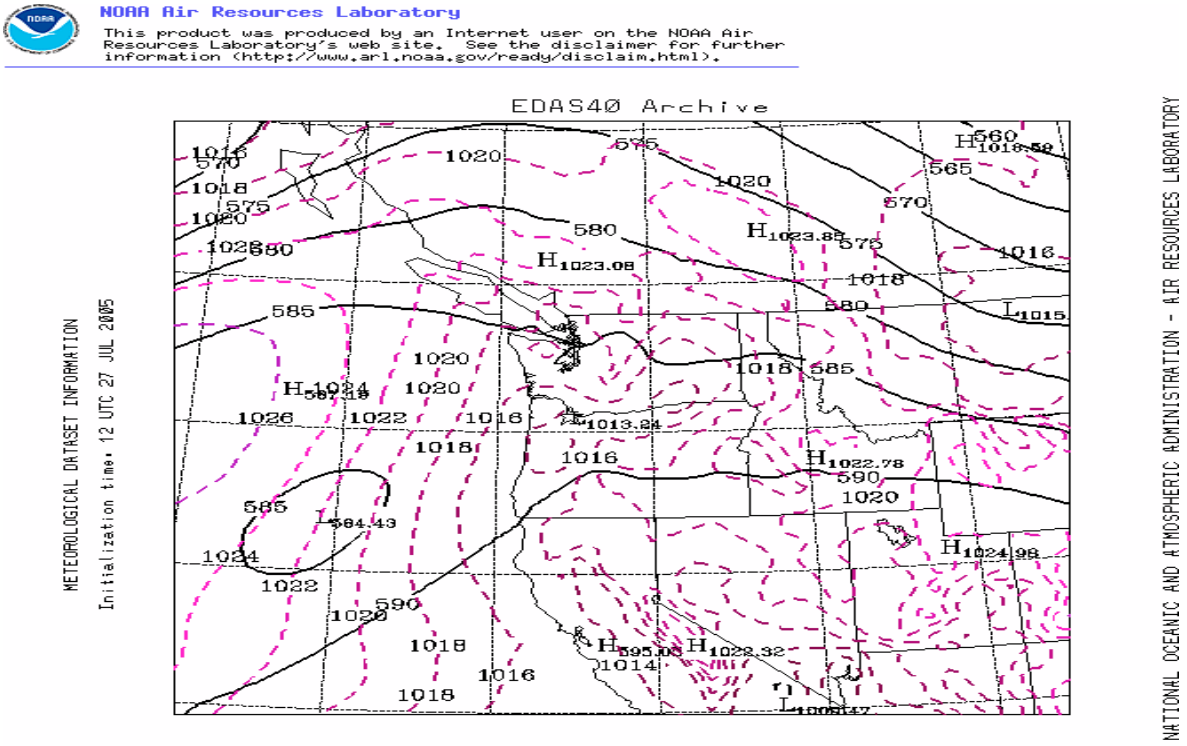
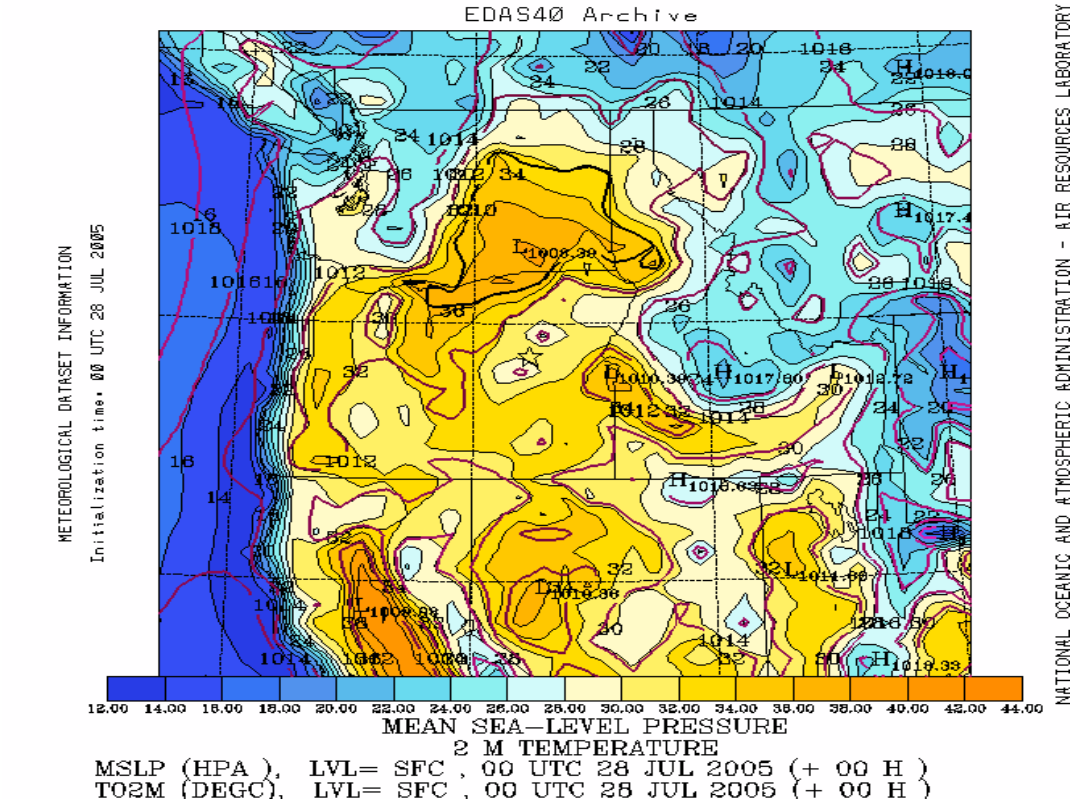


FIGURE 6 – MODELED UPPER AIR SOUNDING FOR PORTLAND

PORTLAND FIRE WEATHER – 2005 ANNUAL REPORT

FIGURES 7 AND 8 – 500 MB (TOP) AND SURFACE (BOTTOM)





AUGUST 24 (NIGHT) AND AUGUST 25 DAY

This was a nocturnal low humidity/strong wind event that was missed, but continued into the next day. East wind developed shortly after midnight and continued through the next day. A Red Flag warning was issued at 1421 UTC on August 25th and was valid through 1900 UTC. However, forecasters did not warn for the previous night.

The event started to evolve early on August 24th. The upper air pattern at 0600 UTC on the 24th (see figure 9) was characterized by a rather deep upper level low over the Northern Rockies and high pressure centered off the North California coast. An onshore surface gradient existed, but east flow prevailed from 925 mb up to 500 mb. Humidity recovery in zones 605, 607, and 660 on August 24th was generally above 85 percent. By 00 UTC on the 25th the upper low was east of the Continental Divide. However, a portion of the low appeared to be reforming over Northeast Washington. The upper ridge off the California coast continued to build north. A pronounced surface thermal trough was centered in the Willamette Valley and along the foothills of the Cascades. At 0600 UTC on the 25th, a new upper low center was located over East-Central Washington (see figure 10). High pressure remained offshore and the thermal trough persisted in the Willamette Valley. Late-afternoon 10-minute wind speeds were not that strong. Nearly all RAWS sites in zones 605, 607, and 660 reported wind speeds around 5 mph. Stayton, located in the lowest elevations of zone 605, reported 10-minute wind speeds of 15 mph at 00 UTC on the 25th. By 0600 UTC on the 25th, 10-minute wind speeds had increased to near 10 mph at several locations.

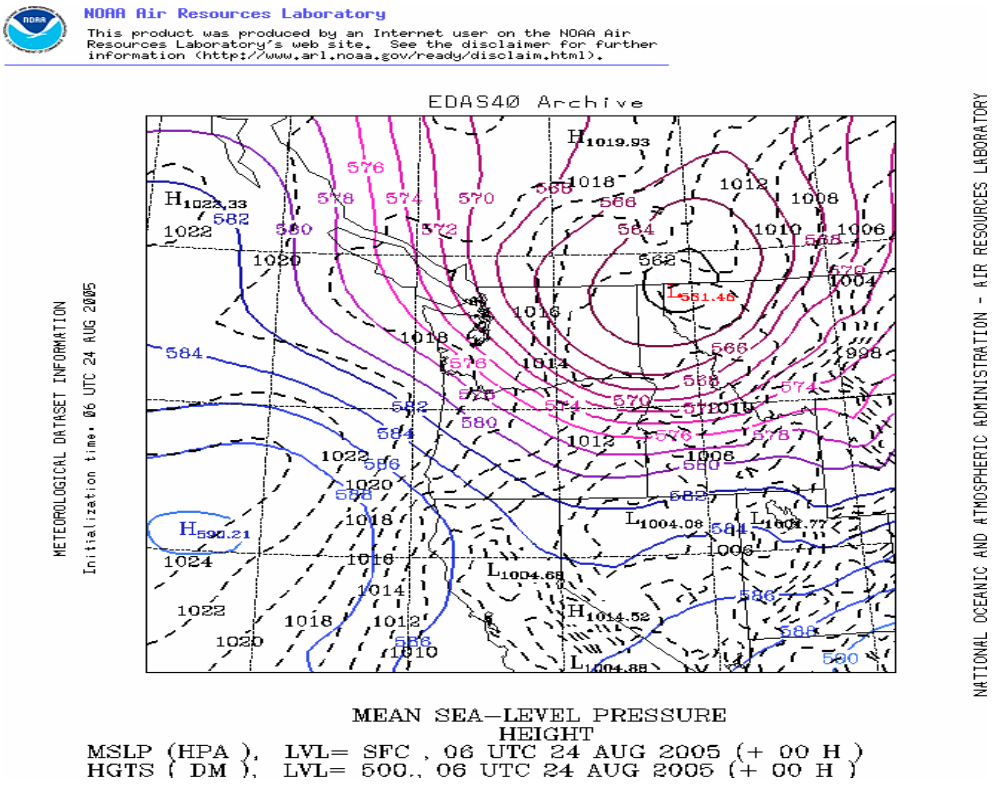


FIGURE 9 – 500 MB AND SURFACE 0600 UTC AUGUST 24TH

The upper air pattern at 1200 UTC on the 25th would not seem to favor east wind in the North Oregon and South Washington Cascades and foothills. The upper ridge axis had moved to near the coastline, and there was fairly weak north flow aloft. The surface pattern exhibited some offshore flow, but the Gorge gradient was not overly strong, generally around 3 mb from Troutdale to The Dalles. However, the 850 mb analysis shows a different story (see figure 11). The 850 mb height lines are dashed, and the 850 mb wind speeds are in the solid colors. Notice the area of 20-25 knot wind speeds over the South Washington and North Oregon Cascades. Horse Creek, Log Creek, and Larch Mountain RAWS all observed 10-minute wind speeds of 10 mph or more **and** humidity values of 35 percent or less between 0600 UTC on the 24th and 1200 UTC on the 25th. Red Flag criteria were met at Log Creek for seven consecutive hours.

The event ended early afternoon of the 25th. By 2100 UTC the upper ridge axis had moved over the west valleys. The Gorge surface gradient had weakened. However, it was surprising that Locks RAWS, near Cascade Locks, maintained a northeast to east wind of 10 mph or more from 1900 UTC until 2300 UTC. Afternoon humidity values of 14 to 19 percent were common. Critical fuel conditions also existed. The 10-day ERC average for the period August 21st through 31st was 46. ERC values on the 25th ranged from 45 at Stayton to 56 at Trout Lake. These values were at or above the 97th percentile historical levels.

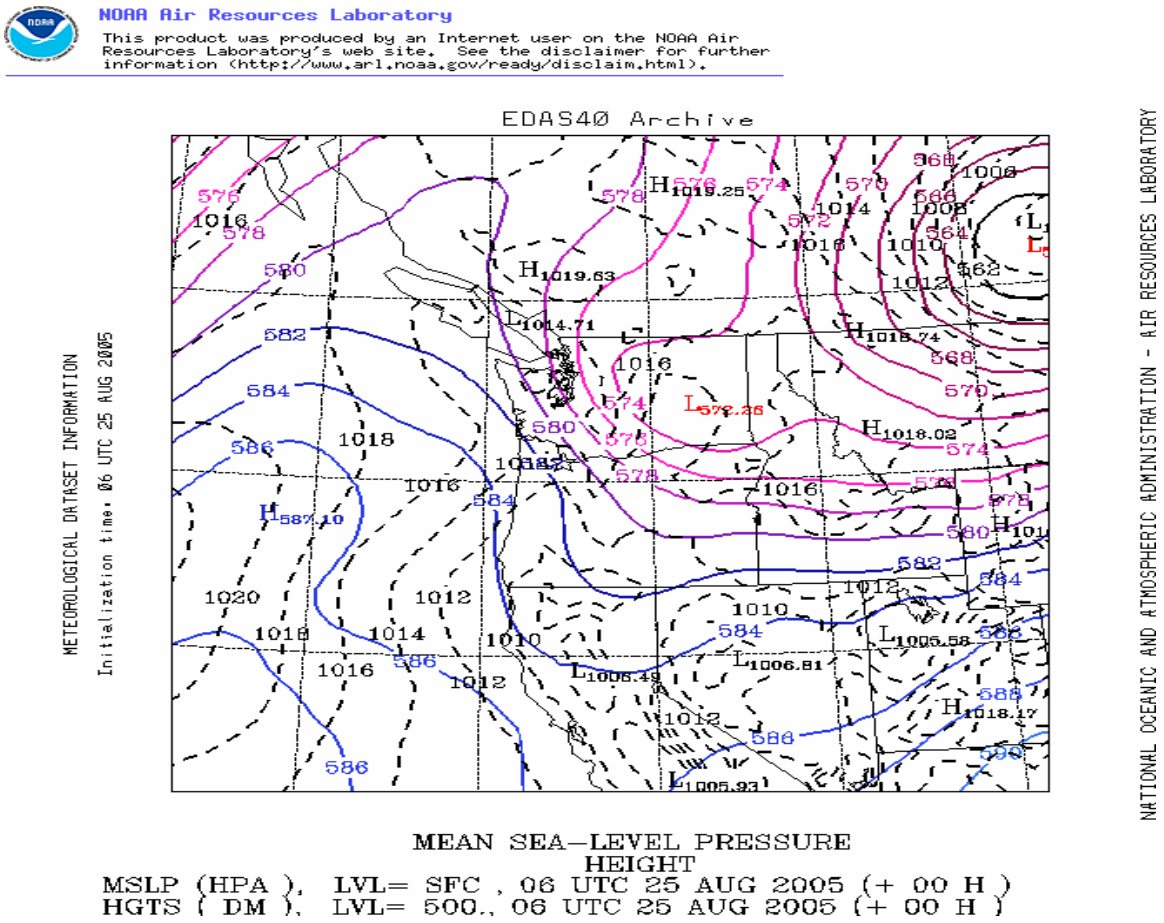


FIGURE 10 – 500 MB AND SURFACE 0600 UTC AUGUST 25TH

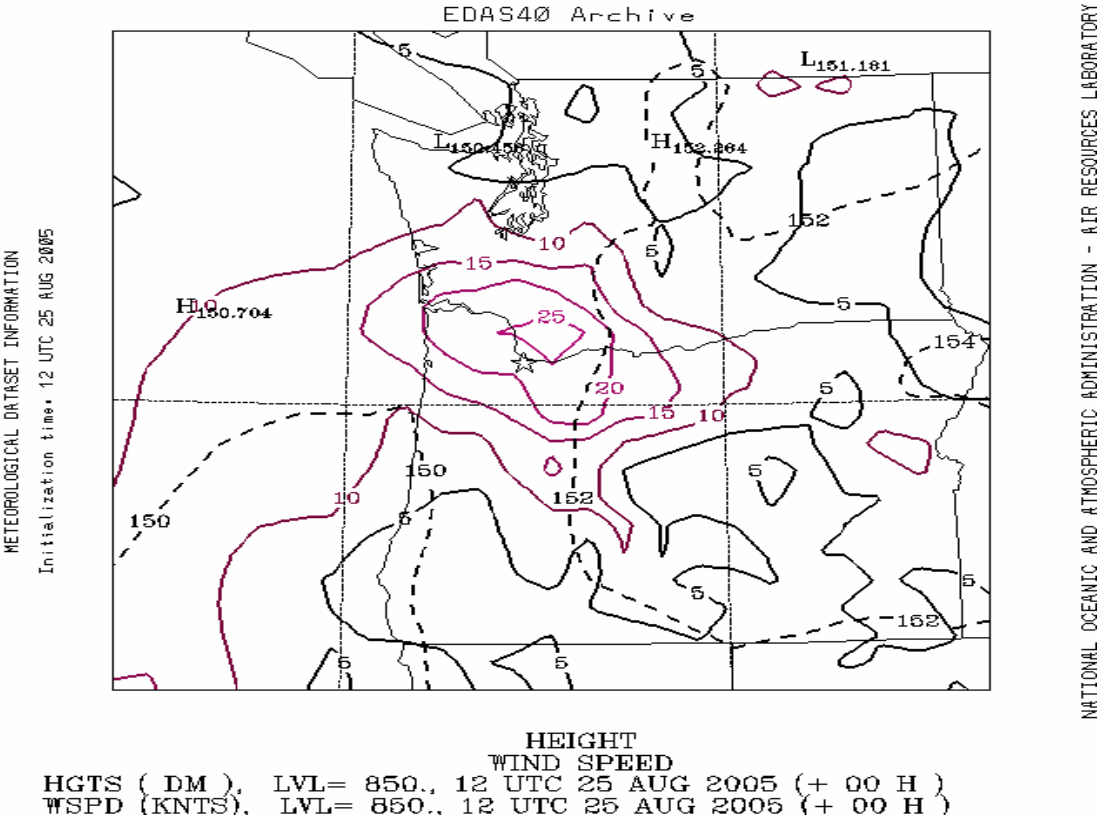


FIGURE 11 – 850 MB HEIGHT AND WIND SPEED 1200 UTC AUGUST 25TH

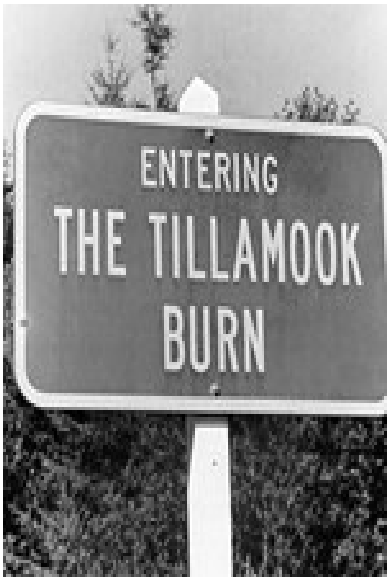
ADDITIONAL COMMENTARY ON CRITICAL FIRE WEATHER PATTERNS

Fires burning under a dry and extremely unstable air mass tend to be plume-dominated and can exhibit extreme fire behavior. The Haines Index is a tool used to assess the degree of air mass instability and dryness. In addition, at least one RAWS site must report a minimum humidity of 25 percent or less.

A dry and unstable air mass event is difficult to validate. Upper air soundings in Oregon are taken at Salem and Medford. Obviously, upper air data coverage is rather sparse. The Portland Fire Weather Office uses a model "grid" to produce forecast guidance. The Haines Index is one product of the guidance. Afternoon forecast Haines Index values are available, but may not be what the actual value is for the day.

Problematic lightning is virtually impossible to evaluate and predict. The general definition of problem lightning is lightning with no significant accompanying precipitation that would result in an appreciable change in fuel conditions. Objective criteria to evaluate this phenomenon are difficult to develop due to the localized nature of thunderstorms and the relative scarcity of RAWS stations. The Northwest Coordination Center devised a different approach for problematic lightning. Instead of concentrating on whether or not precipitation accompanied thunderstorms, the emphasis was placed on fuel conditions. The NWCC developed a Dryness

Level product that takes into account ERC and 100-hour fuel moistures. The Portland Fire Weather unit adopted this methodology for problematic lightning episodes. The main determining factor for warning issuance and validation was whether or not the fuel conditions showed a significant change during and after a thunderstorm event.



FAST FACTS: ***There were eight days when high temperatures reached or exceeded 95 degrees in zones 605, 607, and 660. The latest day was August 13th. Red Box had a high of 96 and Trout Lake reached 95.***

There were eight days when high temperatures reached or exceeded 95 degrees in zones 606 and 608. The latest day was August 13th. Emigrant recorded a high of 95 degrees. The warmest day was July 23rd. Trout Creek hit 101, Emigrant 99, and Yellowstone 98.

ERC values reached or exceeded 40 in zones 601 and 612 on just three days: July 28th, July 29th, and August 8th.

FIGURE 12- TILLAMOOK BURN SIGN

There were 38 large wildland fires in Region 6 during the 2004 season (as reported via ICS-209). The latest reported wildfire occurred on September 27th. This was the Peter French Fire in Southeast Oregon. The fire was contained on the 28th.

Total suppression costs for the 38 large fires were $78 million. The Pot Peak fire (Okanogan-Wenatchee N.F.) cost $27.7 million to fight. The Fischer Fire (Okanogan-Wenatchee N.F.) cost $9.7 million. The third costliest fire (suppression costs) was the Bland Mtn #2 fire at $6.6 million.

The 100-hour fuel moisture values in zone 608 dropped to five percent on July 24th, and remained around five percent through the 30th.

FORECASTS AND SERVICES

SPOT FORECASTS

The 2005 fire season showed a slight decline in spot forecasts, as compared to last year. There were 84 spot forecasts in the 2005 season, and 92 in 2004. Prescribed activities were hindered due to the wet May and June and also a wet October. There were actually more wildfire spots this year than during the 2004 season. Figures 13 and 14 (pages 40 and 41) show the 2005 spot breakdown, by month, and the annual spot summary since 1991, respectively.

Nearly 70 percent of the wildfire spot requests came from the Willamette National Forest. Prescribed spot requests were generally evenly divided amongst the Willamette and Mt. Hood National Forests. The Barlow district of the Mt. Hood carried out a major prescription project in June that required several spot forecasts.

The most active months were June and July. There were 25 spot requests in June, 20 of which were for prescribed activities. July had 27 spot requests, but 20 of those were due to wildfires. Around 80 percent of the total spot requests occurred during June, July, and September. There was a request for a spray project, and another for a HAZMAT operation. There were four prescribed spot requests in February, during a prolonged dry period and lack of snow cover.

INTERESTING SPOT FORECAST TIDBITS FOR 2005

- The **first** spot request for 2005 occurred February 3. The Middle Fork district of the Willamette National Forest made the request for "Jim's Creek Restoration" prescribed burn. The **last** spot request for the season was September 29. The McKenzie district of the Willamette National Forest submitted the spot request for "Box Canyon Meadow" prescribed burn.

- The **first** wildfire spot was issued July 3, 2005 for a fire in the Barlow district of the Mt. Hood National Forest. The **last** wildfire spot forecast was issued September 28, 2005 for the Boundary Fire, on the Wind River district of the Gifford Pinchot National Forest.

- The most spot forecasts in one day: 4 on August 23rd and August 27th. There were 3 spots on several days, the last being September 28th.

- There were 64 spot requests from the Forest Service (USFS), the same number during the 2004 season. This comprised 76% of the spot total. The BLM made 10 requests, eight less than last year. All requests were for prescribed burns. Oregon Department of Forestry (ODF) submitted six requests, two for wildfires and four for prescribed burns. The spray project request came from Eugene, and the HAZMAT request was from Oregon City.

- The 64 USFS spot requests were divided amongst the forests as follows: 43 for the Willamette, 19 for the Mt. Hood, 1 for the Gifford Pinchot, and 1 for the Siuslaw. The Siuslaw and Gifford Pinchot requests were for wildfires.

- The 10 BLM spot requests were split as follows: 3 spots from the Salem district and 7 spots from the Eugene district. All spots were for prescribed fire activities.

- There were 6 spot requests in August of 2005, compared to 21 in August of 2004. However, 8 of the 21 requests last year were due to a training exercise conducted by Tualatin Valley Fire and Rescue. There were 26 spot requests from April 1 to May 31 last year, compared to just 3 during the same time period this year. Once again, there were no large fires (100 acres or Type II management level) in the Portland forecast area.

TURN-AROUND TIME

"Turn-Around Time" has been documented since the 2000 season. It is defined as the elapsed time between spot request receipt (or notification) and forecast transmission. The Web-based spot program makes this element easy to monitor. However, some complications continue for prescribed burns. Quite often, the user-agency will submit a spot request the day before actual ignition. Obviously, turn-around time is not applicable in these cases. The precedent for the Portland office is to disregard turn-around time for requests submitted in advance of the actual burn time.

The Memorandum of Understanding (MOU) between the Pacific Northwest Wildfire Coordinating Group (PNWCG) and Western Region of the National Weather Service (NWS) states that required turn-around times are to be at least 45 minutes for wildfire spot requests and 60 minutes for prescribed burns, unless prior arrangements have been made. The Portland office achieved an average turn-around time of 35.5 minutes for prescribed burns, including the spray and HAZMAT requests, when turn-around time was applicable and an average turn-around time of 42.7 minutes for wildfires. The average prescribed spot forecast turn-around time this year was 10 percent less than 2004. The 2005 wildfire spot forecast turn-around time was almost 30 percent higher than last year. Some of the increase is due to two "call-backs" for wildfires. There are times the Portland office may not have a certified spot forecaster on duty. When this occurs, a certified spot forecaster must be called back to the office. Two call-backs resulted in turn-around times of nearly two hours. The Portland office added two more qualified spot forecasters this season. Instead of five certified spot forecasters, the office now has seven.

The web-based spot program provides a quick and easy means for users to request spot forecasts. There were a few occasions when the completed spot forecast suffered delays upon transmission. These instances seemed to become less of a problem during the latter stages of the fire season.

The longest applicable turn-around time was 120 minutes (July 19 for the Half Canyon prescribed burn). The request came in during the afternoon of the 19th, but the actual burn time was 1000 on the 20th. Prior arrangements were made with the user to have the spot forecast available after the regular afternoon fire weather forecast. ***Policy states that prescribed burn***

requests should be in by 1200 on any given day. Typical spot turn-around times were on the order of 25 to 40 minutes.

FIGURE 13 – 2005 SPOT FORECASTS (BY MONTH)

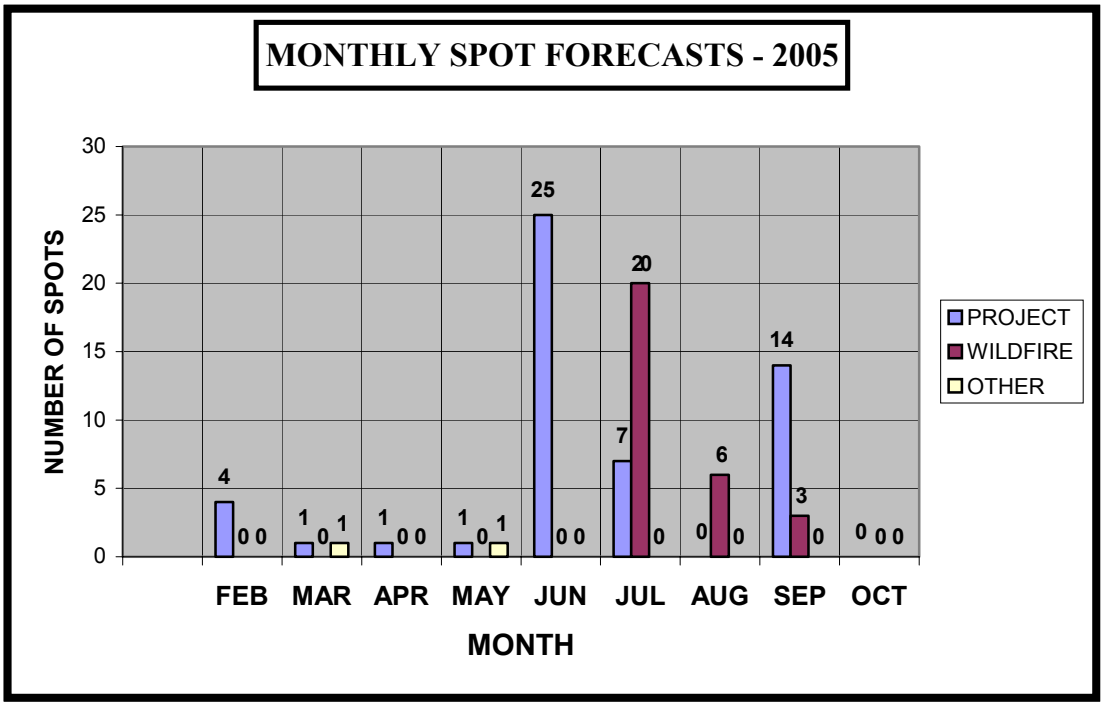


Table 8 shows the annual spot forecast data from 1993 to 2005. The spot frequency showed a dramatic increase from 2000 to 2003, but due to the change in forecast area responsibility and agency requirements for prescribed burns, 2004 spot totals were much lower. Also, some units/districts curtailed prescribed burn activities in 2004 due to budget constraints, staffing concerns, or other reasons.

FIRE DATA 2005: There were 358 lightning-caused fires in Oregon that resulted in 85,039 acres burned.

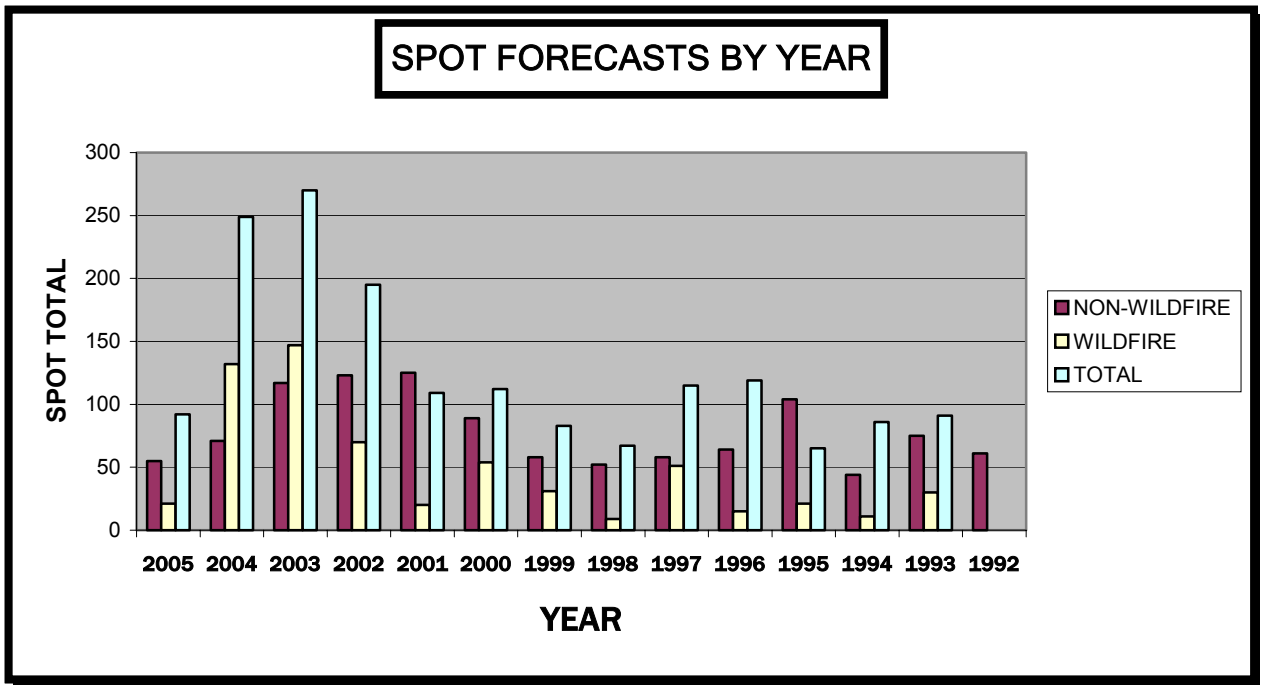
TABLE EIGHT – ANNUAL SPOT FORECAST DATA

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
PROJECT*	75	44	104	64	58	52	58	89	125	123	117	71	55
WILDFIRE	11	21	15	51	9	31	54	20	70	147	132	21	29
TOTAL	86	65	119	115	67	83	112	109	195	270	249	92	84

**** = INCLUDES TRAINING SPOTS, SEARCH AND RESCUE, AND ADDITIONAL MISC. REQUESTS.***

Figure 14 shows the yearly spot breakdown from 1992 to 2005.

FIGURE 14 – ANNUAL SPOT FORECAST TOTALS



FORECAST SERVICES

The fire weather desk was staffed from March 14, 2005 through October 28, 2005. Full fire weather operations (7 days a week) commenced on May 22, 2005, similar to last year. Internet weather briefings (twice-a-week) started on June 3, 2005, but no one participated. Daily internet briefings started on July 2, 2005, which was two weeks later than last year. Participation this year was constant. There were generally 4-7 users on during the peak fire season (mid-July through early September). Eugene Dispatch, Mt. Hood N.F., ODF Sweet Home and the Willamette N.F., both North and South zones, were the primary participants. Internet briefings ended on October 7, which was about two weeks earlier than during the 2005 season. The Portland office participated in daily conference calls set up by the Northwest Coordination Center. These calls started on July 6th and ended September 23rd. The calls continued 10 days longer than last year. The Portland office also supplied one person to the Coordination Center from March through the end of October. The office had just one IMET this season. The other IMET became the Fire Weather Program Manager at the Northwest Coordination Center.

NFDRS forecasts started on May 7th and ended on October 16th. Specific point forecasts continued for Village Creek, Pebble, and Fields RAWS. Verification statistics are based on persistence forecasts (see tables 6 and 7). The Northwest Coordination Centercompiles statistics at the end of the season to track forecast office performance using a slightly smaller data set.

The NWCC NFDRS forecast statistics are collected for the period June 1 through September 30 (about 115 forecasts).

The baseline statistic is forecaster improvement over persistence. There are performance standards within the Memorandum of Understanding (MOU) to be met. These standards include 35 percent improvement for temperature, 25 percent improvement for humidity, and 10 percent improvement for wind. A new MOU will be in effect for the 2006 season, and will include less rigid performance goals. The Portland office came close to meeting the temperature and humidity standards (32 percent improvement for temperature and 25 percent improvement for humidity). These values were slightly higher than 2004. However, the Portland office showed diminished success in wind scores. This year, the average forecaster improvement over persistence was –4.03 percent. In 2004 the score was –2.02 percent. Wind is a difficult parameter to overcome persistence. The Portland office managed to beat persistence in May, June, and October, but faltered the remainder of the season.

TRAINING AND EDUCATIONAL OUTREACH ACTIVITIES

Portland continued to be heavily involved in teaching and training activities. Table nine shows all of the outreach activities from last fall to this summer (see page 43). The Portland office has several people involved. The S-190 through S-590 series has undergone major revisions. PowerPoint presentations have been developed, replacing the slides and overhead projection graphics. Portland continues to have some responsibility for teaching and training services for zones 609, 610, and 611 although Pendleton is the primary resource.

The coldest minimum temperature during the active portion of the fire season, July 1 through September 30, was 27 degrees at Boulder Creek RAWS in zone 608. Boulder Creek dropped to 28 degrees on May 24th. The lowest high temperature during the active fire season was 48 degrees at Emigrant in zone 608 on September 10th.

2005 FIRE STATS: There were 333 human-caused fires in 2005. These fires burned a total of 31,201 acres.

TABLE NINE – TRAINING AND EDUCATIONAL OUTREACH ACTIVITIES

DATES	ACTIVITY	AGENCY/USER	INSTRUCTOR
November 22, 2004	FMO MEETING	ODF VENETA	WEISHAAR
December, 2004	S-290	CENTRAL OREGON	SALTENBERGER
February 14-15, 2005	S-290	COWLITZ COUNTY	SALTENBERGER
February 18-19, 2005	S-290	ODF	SALTENBERGER
February 26-27, 2005	S-290	WALDPORT FD	SALTENBERGER
March 3, 2005	RX-300	USFS	SALTENBERGER
March 7-11, 2005	S-491	VARIOUS	SALTENBERGER
March 12, 2005	S290 REFRESHER	CORNELIUS R.D.	WEISHAAR
March 14,2005	S-290	USFS	SALTENBERGER
March 16, 2005	FMO MEETING	WILLAMETTE	WEISHAAR
March 20-22, 2005	S-390	COWLITZ COUNTY	WEISHAAR
March 24, 2005	S-290 REVIEW	USFS MT. HOOD	SALTENBERGER
March 31, 2005	INSTRUCTION	ODF- CAMP CASCADE	SALTENBERGER
April 2, 2005	PRESENTATION	OREGON ST. FIRE CHIEFS ASSOCIATION	SALTENBERGER
April 4-8, 2005	IMET WORKSHOP	NWS	CADRE
April 11-12, 2005	S-290	USFS	SALTENBERGER
April 19, 2005	S-290	USFS MT. HOOD	SALTENBERGER
April 26, 2005	FMO MEETING	MT. HOOD	WEISHAAR
May 3, 2005	WFO FIRE WX MEETING	NWS	WEISHAAR
May 10, 2005	AGENCY FIRE MEETING	SEVERAL	SALTENBERGER
May 11, 2005	FIRE MEETING	BLM	SALTENBERGER
May 18, 2005	FMO MEETING	WILLAMETTE	WEISHAAR
May 18-20, 2005	FORECASTER EXCHANGE	NWS	WEISHAAR
June 9, 2005	FMO MEETING	GIFFORD PINCHOT	WEISHAAR
June 20, 2005	S-190	MT. HOOD GUARD SCHOOL	ROCKEY
June 21-22	S-290		ROCKEY

IMET DISPATCHES

The 2005 fire season was rather benign, especially compared to the period 2000-2003. There were no "large" (100 acre or Type II or higher) fires in the Portland fire weather area during the 2005 season. The Portland office had one qualified Incident Meteorologist (IMET) in 2005. However, another qualified IMET arrived on station (from Juneau, AK) in early October 2005. Another qualified fire weather forecaster spent considerable amount of time detailed at the Northwest Coordination Center to provide support for decision-making and resource allocation. This continues to be a very important mission to the Coordination Center.

The Portland office filled just one IMET request. Two other requests had to be turned down due to limited staffing at the forecast office and at the NWCC.

TRYON COMPLEX (13 Days)

IMET:	SCOTT WEISHAAR
DATES:	AUGUST 10 through AUGUST 22
LOCATION:	Wallowa-Whitman National Forest and Hells Canyon NRA ICP at Joseph, OR.
IMT:	Oregon Interagency Type II (Blue Mountain).
CAUSE:	Lightning

2005 MAJOR FIRES

There were no major fires in the Portland Fire Weather area during the 2005 season.

FINAL SUMMARY

The 2005 fire season was short, but had the potential to become intense. Antecedent conditions such as snow pack and spring precipitation provided a "gloom and doom" forecast for the upcoming fire season. Snow pack was virtually non-existent, February and March were extremely dry, and then a wet April through June resulted in abundant vegetation. The limited amount of lightning during July and August prevented the fire season becoming much more severe. A major precipitation event at the end of September brought an abrupt end to the season. Prescription activities were non-existent in October due to abundant rainfall.

Red Flag criteria were basically unchanged. The term "episode lightning" was replaced by "thunderstorms with little or no appreciable precipitation resulting in little change in fuel conditions". There were three critical events in 2005. One was for dry and unstable air mass (Haines 6-type conditions), and two were for wind/low humidity.

ACKNOWLEDGEMENTS: Several individuals provided assistance in preparing this document. The Northwest Coordination Center meteorologists were major contributors, especially Terry Marsha, who provided the RAWS data, and John Saltenberger, who provided NFDRS verification and archived data. The Predictive Services Division provided fire information and fuels analysis data. Additional thanks goes to Steve Todd, MIC, for providing the necessary time to prepare this summary, Kirsten Willman, for editing expertise, and Sarah Bushore, for helpful hints and suggestions, as well as printing the final version.